

divided at the summits, which are hispid : anthers forty to sixty, with numerous cells, and furnished with pores at summits : a moniliform cord at base of column : interior of perianth covered with variously formed tubercles.

*R. Patma.* When expanded, two feet diameter, arising directly from the root of the *Cissus* : disc of column concave ; processes on surface of disc *numerous*, of a pyramidal form, the summits of which are entire and hispid : lower part of tube of perianth and column glabrous ; interior of perianth covered with variously formed tubercles : anthers with cells and pores ; number not mentioned : no moniliform cord at base of column : antheriferous flower containing cavities filled with spores, hence hermaphrodite.

*R. Manillana.* Pl. VI. Bud, before expansion, two and a half inches in diameter, arising from a cup three-fourths of an inch high, formed by the thickened bark of the root of the *Cissus* ; the bractæ originating from the inner side of the upper edge of the cup ; no appearance of reticulation under the base : disc of column convex ; processes on surface eleven, one of which is in the centre, the rest arranged around it, their summits entire and hispid ; lower part of tube of perianth studded with thick glandular hairs ; anthers ten, with cells and pores as in the other species ; no moniliform cord at base of column ; sporiferous cavities not apparent ; flowers examined probably male ; interior of perianth covered with various-formed tubercles.

XLII.—*Contributions to the Ichthyology of Australia.* By JOHN RICHARDSON, M.D., F.R.S., &c., Inspector of Hospitals, Haslar.

[Continued from p. 218.]

SEBASTES PERCOIDES, Percoid *Sebastes*.

*Scorpaena percoides*, Solander, Pisces Austr. ined. p. 4.  
 —————, Parkins. drawings, vol. ii. pl. 16. No. 14.

THIS species was discovered on Cook's first voyage on the coast of New Zealand, off Cape Kidnappers, and at Motuaro in Queen Charlotte's Sound. Parkinson's sketch is unfinished, and but partially tinted, with some appended notes of the markings, but is sufficiently characteristic to leave no doubt of the fish being a *Sebastes*, and, from its slight armature, apparently allied to *inermis*. Its colours are more varied than those of any species described in the 'Histoire des Poissons.' Solander's short description includes very few details of form.

The height of the body is greatest about the middle of the pectorals, and is contained three times and a half in the total length of the fish, caudal included. The length of the head is a trifle greater than the height of the body. The curves of the back and belly are equal, and unite gradually with the profile of the head, which is moderately and regularly convex, particularly above. The eye is

rather large; the orbit being a little more than one-fourth of the length of the head, and somewhat less than its own diameter from the end of the snout. There is a strong recumbent spine on the nasal bone, and perhaps a smaller one on the mesial line of the vertex, but the superciliary ridge appears to be quite unarmed, the figure merely showing a double row of dark dots or pits. The pre-orbital presents three angular corners, touching the limb of the maxillary, and the preoperculum four on its curved under limb, the second being more prominent and conical than the others. The infra-orbital ridge is not marked as it crosses the cheek, and two small eminences are the only indications of the lateral occipital ridge. The temporal ridge, as in the other *Sebastes*, is not visible. There are two short opercular spines separated by a small sinus. The scales are only partially marked on the body, and on the head they are shown on the gill-cover and upper part of the preoperculum only; but from Solander's phrase '*squamis tectum*,' we may infer that the head is, as in the other *Sebastes*, extensively scaly.

The dorsal is steeply arched at the beginning, and but slightly notched at the eleventh spine, which is only a little shorter than the twelfth: the third and fourth are the tallest, and are equal to half the height of the part of the body over which they stand: the eleventh is half their height, and the first still shorter; the membrane slopes much behind each spine. The soft part of the fin rises higher anteriorly than the tallest spines, and becomes lower behind. Its corners are rounded, and its margin slightly concave. The lower pectoral rays are thick, and project beyond the membrane. The caudal is slightly concave on the margin, with rounded corners.

The tints partially laid on the sketch are red and lake, with much orange, olive, and yellowish green. The head is marbled with olive and red. The blotches formed on the dorsal by the ends of the transverse bands are irregular, and do not reach the margin of the fin. On the spinous dorsal and pectoral there is much dark dotting not noticed in the following description:—

"*SCORPÆNA PERCOIDES*. *Piscis pedalis vel infra, dilutè rubicundus, fasciis quinque fuscis: prima per basin capitis; secunda in medio pisce; tertia paulo pone secundam; quarta inter partem posteram pinnæ dorsalis et analem, supernè bifida; quinta ad basin pinnæ caudalis. Oculi magni, vicini, pupilla nigra, iris incarnato-argentea. Caput sordidè rubescens, subtus pallidum, squamis tectum: lamina posterior posticè plumbea. Pinna dorsalis colore dorsi, eodemque modo fasciata. Pinnæ pectorales latissimæ, extus basi maculâ magnâ, fuscâ, et in medio fasciâ obsoletâ, subolivaceâ. Pinnæ ventrales rubicundæ. Pinna analis rubicunda extus pallidior. Pinna caudalis rubicunda, basi dilutior.*" (Solander.)

*SYNANCEIA TRACHYNIS* (*Nob.*), Rough-vomered Hog-fish.

No. 8. of Mr. Gilbert's collection.

According to the observations of the collector, this species is not very abundant at Port Essington. "It is mostly seen

in muddy places surrounding stones or rocks. Its native name is 'Wullerinden.'"

This fish agrees in general form, in the numbers of its rays and in many of the details, with the descriptions given of *Synanceia horrida* and *brachio* in the 'Histoire des Poissons,' more particularly with the latter species; but as the posterior dorsal spines are conspicuously lower than the anterior ones, its preoperculum is armed with a spine, and it has vomerine teeth, which both these species are stated to want, I have given it a specific name expressive of the latter character, though I regret that the want of access to examples of the known species prevents me from detailing its other distinctive marks. Most of the figures of *Syn. horrida* usually referred to, having been drawn from dried and distorted specimens, are defective, but a good one exists in the Banksian Library, which was done at Otaheite, where the fish bears the name of 'Ehohoo-pooa-pooa.' From this our *trachynis* differs in the form of its dorsal, in the attachment of its pectoral fin being more restricted, and in other characters.

Its form is well expressed by a phrase used in the work above mentioned, 'a short thick club:' its height and thickness at the pectorals are about equal; its length, caudal excluded, is rather more than twice as much. The shape of the skull has a general agreement with the description of that of *horrida*. There is the same kind of bony eminence between the eyes, with a deep cavity in front, and several pits on the sides, back and top; the same sudden depression of the cranium behind the superciliary eminence; the precipitous rising of the occiput, and the oblique and irregular but somewhat rhomboidal plate on each temple. At the base of these plates in front there is a round pit on each side which might be readily mistaken for the orbits. The anterior and posterior walls of the middle depression of the skull are vertical, not curved, as in Bloch's figure of *S. horrida*. These parts are no doubt entirely masked by the thick spongy skin of the recent fish, but the description is drawn up from the dried specimen, which was moistened to elicit the forms of the cirrhi and the patterns of colour. The very small eyes are situated (as shown in the figure of *Synanceia grossa* in Hardwicke's 'Indian Zoology') in a triangular space formed between the fore and hind limbs of the frontal eminence and a transverse ligament, and have consequently a lateral aspect, differing in this respect from *brachio*, and corresponding with *horrida*. The orifice of the mouth opens upwards before the snout, in an arc of a circle, and the under jaw, when depressed, projects half its own length beyond the edge of the intermaxillary. The *teeth* are short, and densely villiform. The chevron of the *vomer* is rendered concave by the rising of its obtuse lateral edges, and its surface is armed with villiform teeth still shorter than those of the jaws. The tongue and palate bones appear to be toothless. The *first suborbitar* is com-



posed of several smooth ridges, which radiate from a longitudinal one and enclose five or six pits: its lower obtuse point, covered with warty integument, projects partly over the limb of the maxillary: behind this a shorter but acute point projects downwards. The second suborbital, running backwards and rather downwards from the middle of the first one, above the last-mentioned point, rises into an obtuse conical eminence under the cheek, from whence a strong ridge is continued to the angle of the preoperculum. A much less conspicuous ridge runs to the base of the preopercular spine, and a forked one tends upwards in the direction of the posterior frontal plate, to which it is joined by a fold of skin or a mucous canal representing the posterior suborbitals.

The lower limb of the preoperculum is somewhat arched, and the upper one straight and slightly inclined backwards; the angle they form rather exceeds a right one, and at their junction there is a flat, obtuse, projecting point covered with warty skin. Three smaller points similarly covered exist on the lower limb; and from the lower third of the ascending limb there rises a conical obtuse point, from behind which there issues a spine that inclines backwards over the anterior ridge of the operculum. In the '*Histoire des Poissons*' it is stated of *Syn. brachio*, that "*aucune des pièces de la tête n'est épineuse.*" In our specimen the preopercular spine is a quarter of an inch long, and has the usual translucency of a spinous point, although it appears, like the other bony projections on the head, to have been well covered with warty skin in the recent fish. Three cylindrical ridges, like ribs, radiate from the base of the operculum, shine through the integument, and end in obtuse points a little within the verge of the skinny border of the gill-cover. A fourth ridge or rib, apparently belonging to the suboperculum, runs obliquely from under the tip of the second opercular ridge to the tip of the upper one, supporting the little tapering flap which forms the extreme point of the gill-cover, and lies over the upper angle of the branchial opening. These parts having been sewed up in preparing the specimen, I am unable to ascertain with certainty whether there be actually a small ring above this tip, as in *S. horrida*, or merely a loop or angle of the gill-opening, but am inclined to believe that the latter was the case.

The skin, when moistened, becomes mucous and spongy. The lips are fringed by many short, divided filaments, those on the lower jaw being mostly palmated. On the extreme edge of the snout, near the upper point of the suborbital of each side, there is a little simple barbel. The body is studded with soft, rounded, wrinkled warts, each having a firm central point. These warts are largest on the shoulder, and become much smaller, and are further apart, on the belly. The skin, for a finger's breadth along the base of the dorsal, has few or no warts. The lateral line is furnished with about twelve thick, sessile, wart-like cirrhi, the last of which is placed on the basal quarter of the caudal, between its middle rays.

RAYS:—B. 7; P. 16; V. 1½; D. 13½; A. 3½; C. 13.

Seven branchial rays can be counted on the left side of the fish,

the two lower ones being much more slender than the rest. The pectorals are oblique, and coarsely crenated by the projection of the ends of the rays and notching of the membrane. The space between the fins on the throat is greater than that occupied by the attachment of each fin to the humeral bones. The length of the pectoral, measured from the lowest and shortest ray to the edge of the upper rounded part, is exactly equal to one-third of the total length of the fish, caudal included, or a little more than the distance between the upper lip and tip of the gill-flap. The *ventrals* measure half the extreme length of the pectorals, and are bound lengthwise to the belly up to their tips. The dorsal commences immediately behind the occiput, the three first rays rising from a depression which is flanked by the reverted temporal plates. The second spine is the tallest, and the membrane of all the three is deeply notched, particularly behind the third one, where it descends to the base of the fourth spine. These three spines also alternate more to the right and left side of the membrane than the spines which follow. The fourth spine equals the first or third one in height, and the succeeding ones shorten very gradually to the ninth and tenth, which are about one-third shorter. The three following spines increase successively in height, and more rapidly, so that the twelfth equals the first, third and fourth, and the thirteenth is the tallest of all the spines; but it is overtopped by about one-third of the soft fin: this is rounded, its three middle rays are the tallest, and the sixth and last ray is forked to the base, is shorter than the rest, and is bound to the tail by an edging of membrane which runs from its tip to the base of the caudal. The rays of the anal are very oblique, and though about as long as those of the soft dorsal, the fin does not rise nearly so high: the last ray is bound down its whole length to the tail, but the membrane does not run from its tip to the caudal: the three spines are short, curve backwards, and are not pungent. The caudal is small and rounded, and contains thirteen rays, the two extreme ones being shorter than the rest. All the fins are enveloped in thick skin, which towards the tips of the rays is rough and warty. This is especially the case on the dorsal spines.

The colour of the specimen, when moistened, was dark brown, paler towards the ventral surface. The pectorals and caudal appeared dark at their tips, and were crossed on their basal halves by two conspicuous whitish or pale yellow bands, and several streaks on a brown ground. The soft dorsal and anal were crossed by pale, oblique bands.

#### DIMENSIONS.

	inches, lines.	
Length from edge of snout to end of caudal fin .....	10	1
_____ base of ditto .....	8	8
_____ anus .....	6	8
_____ tip of gill-flap .....	2	10
_____ first dorsal spine .....	2	1
Height at ventrals.....	4	0
Thickness at pectorals .....	3	6
Height of second dorsal spine .....	0	9
_____ tenth .....	0	6 $\frac{1}{2}$

DIMENSIONS.		inches.	lines.
Height of thirteenth .....	0	8½	
— of soft dorsal.....	1	0	
Extreme oblique length of pectorals .....	3	6	
Length of ventrals .....	1	9½	
— space between pectorals .....	2	2	
— caudal fin.....	1	5	
— from anus to anal fin .....	0	6½	

*SCOLOPSIS LONGULUS* (Nob.), *Scolopsis* of Torres Straits.

No. 32. Mr. Gilbert's collection.

This *Scolopsis* was seen by Mr. Gilbert in Port Essington, but in the entrance of the harbour only. It has no striking individual peculiarity by which it can be distinguished from the known members of the genus, though none of the species described in the 'Histoire des Poissons' present the same combination of external characters.

It is an elongated species, the height of its body being only one-fourth of the total length, caudal included. The length of the head rather exceeds the height of the body. The cheeks, operculum, suboperculum and interoperculum are covered with scales regularly disposed in oblique lines. The naked skin goes back on the forehead as far as the posterior quarter of the orbit, and, as in *Sc. temporalis*, runs out a little on the temple. The preorbital and limb of the preoperculum are also naked. The lower edge and rounded angle of the preorbital are quite entire, the angle does not project, and the ascending edge of the bone is almost straight, being rendered slightly concave, merely by the projection of the spinous point beneath the orbit. The edge of the bone is armed from this point nearly to the angle by about ten small teeth; there is one small tooth on the second suborbital, under the middle of the eye, pointing backwards, and five or six minute irregular ones farther back, but no spine on the suborbital chain which points forwards. The anterior margin of the orbit rises into a small obtuse eminence between the nostrils and the eye, as in the *Siganoidea*. The preoperculum has a convex under-limb, with a largely rounded angle, both quite entire. The ascending limb is equally and acutely toothed from its upper end to near the round of the angle. None of the teeth are everted. The opercular spine, very short, not pungent and placed high up, bears a strong likeness to the spine of a *Helotes*. There are no grooves on the operculum, which is entirely covered with scales, concealing completely its junction with the suboperculum. The supra-scapular resembles a scale with a strongly toothed edge, and a row of scales, distinguished from the others by darker integument and grooved bases, extends from it in an oblique direction across the nape. The naked skin of the head is full of pores.

The scales of the body are closely and conspicuously toothed on the margin. They are pretty large, there being only thirty-nine in a row between the gill-opening and the caudal, not reckoning a few small ones on the base of the fin; and thirteen or fourteen in a ver-



tical row, two of which are above the lateral line. The lateral line runs straight until it arrives under the posterior part of the dorsal, when it makes a descending curve and becomes straight again; it is composed of scales smaller than the others, as in *Sc. Vosmeri*.

RAYS:—Br. 5; D. 10|9, the last one divided; A. 3|7; P. 17; C. 15 $\frac{1}{2}$ ; V. 1|5.

The dorsal spines are slender and acute; the fourth is the tallest, and the tenth is a little shorter than the second, but one-third longer than the first, which again is nearly half the length of the fourth. The third is the longest of the anal spines, and the first is nearly half as long as the second one. The ventrals are drawn out into a short filamentous tip. The caudal is lunate on the margin, the upper lobe being a little longer than the lower one.

The colours of the dried specimen have faded, but a pale band can still be traced from the upper part of the gill-opening to the caudal fin, coinciding with the lateral line after its curve. There were perhaps two other stripes higher on the back, but the vestiges of them are very obscure. The belly below the level of the pectoral is pale. The scales of the back and sides are each marked by a dark stripe parallel to its exterior margin.

	DIMENSIONS.	inches. lines.
Length from intermaxillary symphysis to tip of tail .....	6	11
base of caudal.....	5	8
anal fin .....	3	9
dorsal fin.....	1	10
tip of opercular spine	1	9 $\frac{1}{2}$
centre of eye .....	0	11
Diameter of orbit.....	0	5
Length of pectorals.....	1	3
ventral spine .....	0	8 $\frac{1}{2}$
ventral soft rays .....	1	3
Height of fourth dorsal spine .....	0	9 $\frac{1}{2}$
soft rays of dorsal .....	0	9
third anal spine .....	0	6
soft rays of anal .....	0	8
Length of upper caudal lobe .....	1	5
central rays of ditto .....	0	9 $\frac{1}{2}$
Depth of caudal fork .....	0	4

### AMPHIPRION MELANOSTOLUS (Nob.), Black-bodied Amphiprion.

No. 26. Lieut. Emery's drawings.

Lieut. Emery's portfolio contains a drawing of an *Amphiprion* taken at Depuch Island, which resembles the *polymnus* of Bloch. It is less elevated at the pectoral fins, and its soft dorsal and anal are rounded and not angular, but its form in other respects is much like that of *Anthias Clarckii* (Ben. Fishes of Ceylon, No. 29). Its resemblance to a Chinese *Amphiprion*, which is perhaps the *chrysopterus* of the 'Histoire des Poissons,' is still more striking, the chief difference in form

being that the latter has the caudal shortly swallow-tailed, while in *melanostolus* that fin has a shallow crescentic margin with the angles slightly rounded. In colours it approaches most nearly to the *Amph. xanthurus* (C. and V., v. p. 402), which is swallow-tailed like the Chinese one.

The three vertical bands of *melanostolus* are white; the head, body and fins, the caudal and pectoral excepted, are black. The first vertical band descends from before the dorsal, nearly touches the eye, and dilates so as to take in the whole gill-cover and the cheek nearly to the mouth; it is then continued downwards to join its fellow on the under surface of the head. The posterior edge of the gill-cover is fawn-coloured, but the breast is black like the rest of the body. The second band begins by a triangular tip on the three or four first jointed rays of the dorsal, is moderately broad, and terminates on the belly immediately before the anal. The base of the pectoral is black, the rest of it primrose-yellow. The caudal is of a paler yellow tint, and a narrow oblique white band, broadest above, separates it from the black tail. The soft dorsal has a narrow yellow border.

The individual from which the drawing was made measured two inches and three-quarters in length.

#### AMPHIPRION? RUBROCINCTUS (Nob.), Red-banded Amphiprion?

No. 25. Lieut. Emery's drawings.

This fish, judging merely from its general form and the distribution of its vertical bands, is also an *Amphiprion*, though probably, from the minuteness of the specimen, the drawing does not distinctly show the peculiar form and armature of the preoperculum and gill-cover. The length of the individual, which was captured at Depuch Island, was an inch and a quarter.

The head is covered with scales, the depression of the dorsal at the junction of its spinous and jointed portions is very slight, and the caudal fin is much rounded, like that of *bifasciatus*. The mouth is lower down than that of *melanostolus* or *Clarckii*, and opens directly forwards, the snout is obtuse and fully as long as the lower jaw, and the profile from the mouth to the dorsal is boldly arched.

The body is black; the under jaw, throat and breast, the distal half of the tail, and all the fins are vermilion-red. The bars are white: the nuchal one, which is the widest of the three, narrows gradually as it descends; the middle one begins by an angular point at the commencement of the soft dorsal, is narrow throughout, is curved boldly, with the concavity towards the tail, and terminates at the anus. The third bar, which is also narrow, encircles the tail, separating the red base and membrane of the caudal from the black of the body. In Lieutenant Emery's figures of this and the preceding species, the spinous rays of the dorsal are represented as exceeding ten, the usual number in the genus.



## PAGRUS LATUS, Solander's Pagrus.

*Sciæna lata*, Solander, Pisces Austr., p. 25. Parkins., pl. 72.—— *aurata*, G. Forster, pl. 208?

On Cook's first voyage a sparoid fish was taken on the coast of New Zealand, which was described by Solander and figured by Parkinson under the appellation of *Sciæna lata*, but which seems afterwards to have been considered by some one as the *Sparus erythrinus* of Linnæus, that name being written in pencil under the figure. It is however evidently a *Pagrus*, and a species nearly related to *guttulatus* and *micropterus*. Solander's description, which is subjoined, with the omission of some passages relating to generic characters only, does not accord so closely with the short notices of these species in the 'Histoire des Poissons' as to permit us to refer it to either of them; yet having neither authentic specimens nor figures to compare with Parkinson's drawing, I cannot point out their distinctive characters in detail. In the soft part of the dorsal being higher than the spinous part, Solander's fish resembles *micropterus*, but that species has only two small anal spines; the size of the specimen was greater than the examples of *guttulatus* or *micropterus* mentioned by Cuvier, which were from five to nine inches in length.

"*Sciæna lata* (fig. pict.). Habitat in oceano Australiam alluente inter Opooragi et Owlooragi. Corpus ovato-oblongum, compressum. Caput breve, declive, obtusum, infra et intra oculos nudum, in vertice squamosum; squamis parvis. Laminæ operculorum squamis majusculis tectæ. Labia crassa, carnosa. Maxilla superior paulo longior. Dentes tantummodo in maxillis et fauce. Dentes maxillares duplici serie dispositi; exteriores conici, obtusiusculi, interiores rotundati, subhæmisphærici. *Obs.* Anticè intra seriem anteriorem, nonnulli parvi, rotundati sparsi; faucium subulati, majusculi, parum inflexi. Oculi magni, iris argentea, nebulis ferrugineis, pupilla magna nigra. Pinna dorsalis, longa, 22-radiata; radiis 12 anterioribus spinosis paulo longioribus. Pinna ani 12-radiata, radiis tribus anterioribus spinosis, reliquis muticis, duobus posticis approximatis. Pinnae pectorales lanceolatae, paulò pone medium trunci extensæ, 14-radiatae. Pinnae ventrales, oblongæ, acutæ, pectoralibus  $\frac{1}{3}$  brevioribus. Pinna caudalis 17-radiata, bifurca, lobis acutis, inferiore brevior. Squamæ majusculæ, duræ, adhærentes. *Color.* Piscis totus nitens, e rubicundo argenteus, fasciis quinque latis obsoletis, altius rubicundis: 1<sup>ma</sup> pone caput, 2<sup>da</sup> in medio pisce, 3<sup>ta</sup> supra initium pinnae analis, 4<sup>ta</sup> inter finem pinnae dorsalis et analis, 5<sup>ta</sup> in ultimâ caudâ. *Obs.* Gula, pectus et abdomen albæ immaculatæ. In dorso, præcipueque propè lineam lateralem, maculae plurimæ rotundæ e cæruleo argenteæ, sparsæ. Pinna dorsalis dilutè rubicunda, maculis rotundis glaucis adspersa. Pinnae pectorales rubicundæ. Pinnae ventrales albidæ, in medio glaucescentes. Pinna analis albida, posticè glauca. Pinna caudalis rubra, margine inferiore albo. Diameter

